

# CROSS CONNECTION CONTROL PROGRAM IMPLEMENTATION AND ENFORCEMENT

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## PRESENTATION OVERVIEW

- ◉ Fun pictures
- ◉ Why are CCC Programs important?
- ◉ Common Hurdles and Advice
- ◉ Enforcement
  - Sanitary Surveys
    - ◉ Significant Deficiencies
    - ◉ Corrective Action Plans

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ANY GUESSES AS  
TO WHAT THIS IS?

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OR THIS?

Hydroflush: "Breaks up plugged tanks; clear plastic makes it easy to see when waste system is clear."

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INDUSTRIAL SIZED HYDROFLUSH



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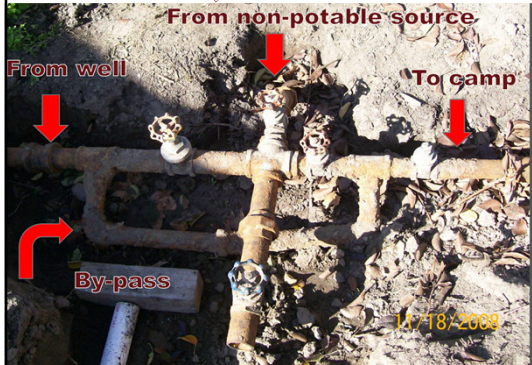
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MEANWHILE, IN CALIFORNIA...



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Cross Connection Control Programs

## WHY ARE CROSS CONNECTION CONTROL PROGRAMS IMPORTANT?

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## WHY ARE CROSS CONNECTION CONTROL PROGRAMS IMPORTANT?

- ◉ 1. To prevent the occurrence of backflow
- ◉ 2. Laws require it (SDWA, NAC, UPC)
  - ◉ 3. To protect public health
  - ◉ 4. Legal defensibility

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## REGULATIONS

- ◉ Safe Drinking Water Act → responsibility given to state governments and water authorities for drinking water protection.
- ◉ All 50 states require cross-connection control or backflow prevention.
- ◉ Backflow prevention dates back to 1800's after large companies realized employee illness and loss of production was due to contaminated drinking water.

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## REGULATIONS- NAC

- ◉ NAC 445A.67185: A supplier of water shall:
  - 1. Ensure there are no unprotected connections between the supplies of water, systems for the pumping, storage and treatment of water, and distribution system of the PWS and any source of pollution or contamination pursuant to which unsafe water can be drawn into the PWS as a result of back-siphonage or backpressure.
  - 2. Develop and carry out a program for the control of cross-connections that is approved by the health authority. It must:
    - a) Be submitted to the health authority for its approval.
    - b) Include:
      - 1) a schedule for implementation
      - 2) a plan for inspecting the properties served by the public water system to determine the potential risk of cross-connection and backflow.
      - 3) A plan for testing and tracking all primary assemblies for the prevention of backflow. The plan must provide for the annual testing of those assemblies and for the retention of records from that testing.
      - 4) A list of the particular assemblies for the prevention of backflow which may be used in the PWS or on service connections to the PWS.
      - 5) A list of measures the PWS will take to enforce the program is any customers of the system fail to comply with the program.

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## REGULATIONS- NAC

- c) Ensure compliance with NAC 445A.67185 to 445A.67255
- d) Comply with provisions of:
  - 1) Uniform Plumbing Code
  - 2) Recommended practice for Backflow Prevention and Cross-Connection Control
  - 3) The Manual of Cross Connection Control
- \* If there is any conflict between any of the provisions described in this paragraph, the most stringent of those provisions prevails.

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## REGULATIONS- UPC

- ◉ Uniform Plumbing Code (Paraphrased)
  - Chapter 10: Section 1002– Unlawful Connections
    - a) No installation of potable water supply piping shall be made that it will be possible for contaminated water to enter any portion of such piping from any plumbing fixture by reason of back-siphonage, during normal use or when such plumbing fixture is flooded, or subject to back pressure.
    - b) No person shall make a connection or allow one to exist between pipes carrying domestic water supplied by any water system, and any fixtures carrying water from any other source or that has been used for any purpose whatsoever, or any piping carrying chemicals, liquids, gases unless there is provided a backflow prevention device approved for the potential hazard.
    - c) No plumbing fixture, device or construction shall be installed, maintained or be connected to any domestic water supply when such an installation or connection may provide a possibility of polluting such water supply or may provide a cross-connection between a distributing system for drinking and domestic purposes and water which may become contaminated by such plumbing fixture unless there is provided a backflow prevention device approved for the potential hazard.

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## REGULATIONS- UPC

- ◉ Uniform Plumbing Code (Paraphrased)
  - Chapter 10: Section 1003– Cross Connections
    - Cross-Connection control shall be provided in accordance with the provisions of this chapter.
    - No person shall install any water operated equipment or mechanism, or use any water treating chemical or substance, if it is found that such equipment, mechanism, chemical or substance may cause pollution or contamination of the domestic water supply. Such equipment or mechanism may be permitted only when equipped with an approved backflow prevention device or assembly.
    - All devices installed in a potable water supply for protection against backflow shall be maintained in good working condition by the person having control of such devices. (i.e. property owners)

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## PROTECT PUBLIC HEALTH



- ◉ What do you think of when you see this?
  - Breakfast?
  - Lunch?
  - Dinner?
  - Family Night Out?

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## PROTECT PUBLIC HEALTH

- ◉ You probably don't think of:
  - How filthy the kitchen may be
  - Contracting food poisoning
  - Rodent infestations in food storage room




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## PROTECT PUBLIC HEALTH

- ◉ Just like your customers do not expect to become ill from the drinking water you provide them.



Our Commitment  Our Profession

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## PROTECT PUBLIC HEALTH- TIMES ARE A CHANGING

- ◉ Water no longer solely used for drinking, cooking, cleaning and sanitary purposes
- ◉ 100's of gadgets exist that create potential
  - Fertilizers, insecticides, home dialysis machines
  - Pools, boilers, gray water, dark rooms
  - Alternative sources (wells, springs)
- ◉ If there is a "need", someone will sell a "solution".

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## PROTECTING THE PUBLIC FROM THEMSELVES



Vallterra F02-4100 45° RV Hydroflush  
by Vallterra [\(14 customer reviews\)](#)

Price: ~~\$21.04~~ & eligible for **FREE Super Saver Shipping** on orders over \$25. [Details](#)

**In Stock.**  
Ships from and sold by Amazon.com.

**Want it tomorrow, March 7?** Order within 3 hrs 43 mins, and choose **One-Day Shipping** at checkout. [Details](#)

**11 new** from \$20.56

Share your own customer images

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**Product Features**

- Includes an **internal backflow preventer and removable anti-siphon valve**
- 1/2" FPT x 1/2" MPT

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Cross Connection Control Programs

## COMMON HURDLES AND ADVICE FROM FELLOW OPERATORS

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## WHAT HURDLES HAVE OTHER PWS'S EXPERIENCED?

- 1. Education
- 2. Limited Resources
  - Financial
  - Staffing
  - Physical
- 3. Ordinance Process
- 4. Plumbing and building use changes often

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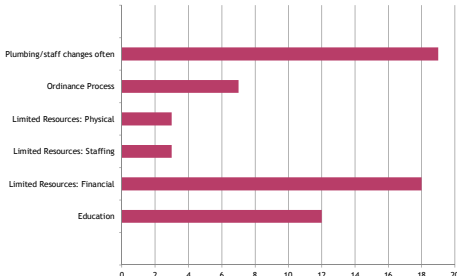
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## HURDLES BY THE NUMBERS

Hurdles



Hurdle	Frequency (approx.)
Plumbing/staff changes often	19
Ordinance Process	7
Limited Resources: Physical	3
Limited Resources: Staffing	3
Limited Resources: Financial	18
Education	12

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## WHAT ADVICE WOULD OTHER OPERATORS GIVE?

- 1. Educate, educate, educate.
- 2. Establish an ordinance.
- 3. Timing is everything.
- 4. Choose carefully what type of program to implement.

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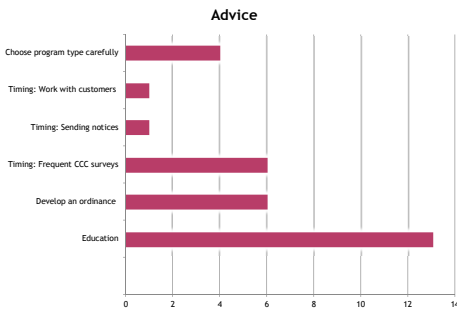
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## ADVICE BY THE NUMBERS




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Cross Connection Control Programs

## HOW DOES THE BSDW PLAN TO ENFORCE THIS REQUIREMENT?

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## SANITARY SURVEYS

- ◉ Ground Water Rule- Implemented in Dec 2009
- ◉ Requires Sanitary Surveys for all GWSs:
  - Community & Non-community
- ◉ Weren't they required before?
  - TCR required them but were the responsibility of the PWS. C= 5 years. NC= 10 years!?!
    - Once/3 years for Community systems. (NAC)
    - Once/5 years for Non Community systems. (NAC)



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## NEW REQUIREMENTS OF SANITARY SURVEYS

- GWS's required to provide any existing information that would aid the state in completing a sanitary survey
- States required to assess 8 specific elements of a Sanitary Survey
  - Source, Treatment, Distribution System, Storage, Pumps, Monitoring, Management, Operator Certification
- States required to identify significant deficiencies
  - Corrective action is required for any system with a significant deficiency or source water fecal contamination

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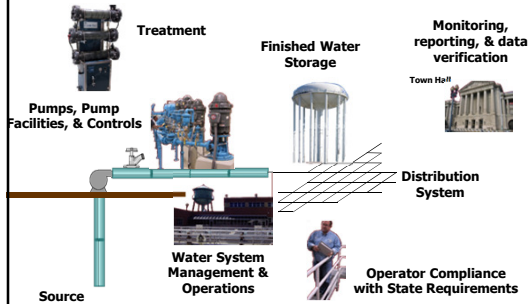
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## 8 ELEMENTS OF SANITARY SURVEYS



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## DEFINITION OF A SIGNIFICANT DEFICIENCY

- ◉ Nevada Administrative Code Chapter 445A.4665
  - "Any deficiency found at a public water system during a sanitary survey that is a violation of any provision of NAC 445A.50 to 445A.6731, inclusive, which may have the **potential** to cause a risk to public health. A significant deficiency includes, **without limitation**, unsanitary source conditions, treatment plans deficiencies, inadequate disinfectant contact time, **cross connections**, endangerment of sources, unsanitary storage and distribution of water, inadequate pressure, inadequate staff and **any other deficiency of comparable significance**."

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Cross Connection Control Programs

## QUESTIONS SO FAR?




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## HOW IS THE LACK OF A CROSS CONNECTION CONTROL PROGRAM A SIGNIFICANT DEFICIENCY?

- ◉ Cross connections are inevitable.
- ◉ However, an approved backflow preventer is essential.
- ◉ An unprotected cross connection can be an imminent threat to public health.
- ◉ Homemade connections within businesses are common (unlicensed plumbers)
- ◉ An ounce of prevention is worth a pound of cure

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### HOW DO I ADDRESS A SIGNIFICANT DEFICIENCY?

- ◉ 30 days: State must notify PWS of a significant deficiency no later than 30 days after identification.
  - Notice may include a specific corrective action.
  - May also include deadline(s) for implementing corrective actions.
  - Photographic evidence required.

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### HOW DO I ADDRESS A SIGNIFICANT DEFICIENCY?

- ◉ PWS must consult with State within 30 days of survey report date. A verbal consultation regarding a solution MAY occur at the time of the sanitary survey.
- ◉ PWS must address significant deficiency in writing to the State and include a proposed implementation plan & schedule within 45 days of receipt of the survey report.

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### HOW DO I ADDRESS A SIGNIFICANT DEFICIENCY?

- ◉ All corrective actions must be completed within 120 days of report date or the system must be in compliance with a State approved corrective action plan.

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**SIGNIFICANT DEFICIENCY EXAMPLE #1 IDENTIFICATION:**

Well does not have a proper cap and when I arrived there was an empty Clorox bottle stuffed down into well casing, serving as a "cap".

Identified August 9, 2012.

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**SIGNIFICANT DEFICIENCY EXAMPLE #1 NOTIFICATION:**

FACILITY	CATEGORY	DESCRIPTION
W01 - WELL 1	Source	The well does not have a watertight cover plate or there are problems with the cover plate. NAC 445A.6689

Comments: Upon arrival the well cap was removed from the casing and an upside down empty bottle of chlorine bleach was protruding out of the casing. The Owner removed the chlorine bottle, found the steel cap nearby on the ground and replaced it on the well casing.

The well cap must be watertight and be bolted on to minimize the occurrence of unauthorized access to the well.

Due to the nature of this deficiency (significant) photographic evidence must be provided that this situation has been rectified and must be received in our office by September 17, 2012.

Mailed August 20, 2012

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**SIGNIFICANT DEFICIENCY EXAMPLE #1 CORRECTIVE ACTION:**

Photo received from Owner indicating a new cap was purchased and installed.

Photo received October 2, 2012. (better late than never?)

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**SIGNIFICANT DEFICIENCY EXAMPLE #1**

**EXTRA CREDIT:**

Now it doesn't look like a well at all!!!

This makes up for the tardiness of the previous photo. ☺

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**SIGNIFICANT DEFICIENCY EXAMPLE #2 IDENTIFICATION:**

TYPE/LEVEL	CATEGORY	DESCRIPTION
Management	System Management and Operation	The system does not have or has not implemented a current written cross-connection control program, NAC 445A.671B5

Comments: A Cross-Connection Control Plan has been developed by Water System staff but has not been implemented. Based on the Cross Connection Control Plan provided after the Sanitary Survey, the BSDW proposes the following implementation schedule:

- \* Surveys of City Owned Properties initiated by 08/01/12 with final completion by 10/31/12.
- \* Implementation of a public information program and new construction inspections 10/1/12.
- \* Record Review and Priority List must begin no later than 12/1/12.
- \* Surveys of 1st priority connections must begin no later than 1/1/13.
- \* Surveys of 2nd priority connections must begin no later than 3/1/13.

The Water System must consult with the BSDW within 30 days of receipt of this letter and either agree to the proposed implementation schedule or propose alternate dates.

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**SIGNIFICANT DEFICIENCY EXAMPLE #2: RESPONSE**

- ◉ Plan is still in the works. Significant political issues exist in this community.
- ◉ Treatment Technique Violation issued and they will need to include notice in their 2013 CCR. Annual CCR notification until deficiency is resolved or they are in compliance with a state approved Corrective Action Plan.

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### WHAT HAPPENS AFTER 120 DAYS?

- ◉ Corrective Action not completed and no Corrective Action Plan
  - Treatment Technique Violation
- ◉ Corrective Action Plan not adhered to
  - Notify State, revise and gain approval of a new plan.
  - Treatment Technique Violation

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### WHAT HAPPENS AFTER 120 DAYS?

- ◉ Corrective Action Plan approved but corrective action not completed
  - CWS: must be noted in next CCR publication
  - NCWS: Public Notice w/in 1 year of being notified of significant deficiency (or earlier if directed by the state.)

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### SO, I HAVE A VIOLATION...

- ◉ All Violations requires annual notification in your CCR and contributes to your ETT Score  
(see The Ross and Reggie show on Thurs)
- ◉ CCR must include
  - Info about the deficiency
  - Date deficiency identified
  - State-approved plan and schedule for correction, including
    - interim measures and progress to date
  - Repeated annually until completed

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Cross Connection Control Programs

## WHAT DOES IMPLEMENTATION LOOK LIKE ACROSS NEVADA?

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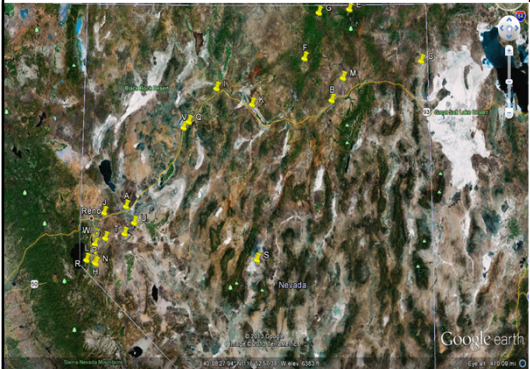
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## GOOGLE EARTH IMAGE OF IMPLEMENTED PLANS ACROSS NORTHERN & CENTRAL NV



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## ATYPICAL SCENARIOS

- System only has homes, no businesses
- Requiring as businesses change hands
- Waiting until State forces us
- Be vigilant & still should have a plan due to irrigation, hydroponic heating, etc.
- This could take YEARS!!
- The reason for this training. ☺

PWS Approaches

State Response

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### WHERE DO I START?

- ◉ Contact NVRWA
- ◉ Draft a plan
- ◉ Submit to BSDW
- ◉ Research ordinance process for your locale
- ◉ Identify high hazard connections
- ◉ Apply for SRF loan \$\$
- ◉ Roll out in stages to lessen burden on staff
- ◉ Baby steps!!

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### WHAT IF'S:

- ◉ A business won't comply:
  - This is where an ordinance is important
- ◉ A business requests an extension:
  - Consider allowing a one time extension
  - Work with property owners on a case by case basis

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### RESOURCES AVAILABLE:

- ◉ Bureau of Safe Drinking Water
- ◉ Washoe County Health Department
- ◉ Nevada Rural Water Association
- ◉ Other water systems and operators who have implemented their programs.
- ◉ Facebook group: NV Water and Wastewater Operator's Forum

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## CLOSING REMARKS

- "I don't have any good advice for an easy way to do it. It's like going to the dentist." Ryan Limberg, City of Elko

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